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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,218

09/19/2005

Joachim Wiechers

HBC 253-KFM

1743

7590

06/23/2006

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EXAMINER

BARBEE, MANUEL L

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/542,218

Applicant(s)

WIECHERS, JOACHIM

Examiner

Manuel L. Barbee

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-27-05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because drawing sheets for Figures 6 and 8 are missing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 9 is objected to because of the following informalities:

The last two lines of claim 9 ends with the text "used, whose output is displayed."
It is suggested that this text be deleted and the text --used to display the signal-- be

inserted for clarity and for consistency with text earlier in the claim when the observed filter is used.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, claim limitations for "a measured variable, particularly a signal to be measured" are indefinite because it is not clear what the bounds of the claim are. It is unclear whether the claim is directed to minimizing error in a measured variable or a signal to be measured. Also, on line 7 of claim 1, the phrase "as early as possible" is indefinite. One of ordinary skill in the art would not be able to determine exactly how soon in reference to any point in time that a signal change is recognized.

The term "substantially" in claim 2 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what the bounds are set for the signal variation.

Claims 3-13 depend from claims 1 and 2 and therefore incorporate the defective language.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-8 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-8 and 13 are directed to a mathematical algorithm. A claim directed to a mathematical algorithm is statutory if the claim recites a practical application by showing a physical transformation or producing a result that is useful, concrete and tangible. Unlike claims 9-12, claims 1-8 and 13 do not produce a result. Further, claims 1-8 and 13 do not show a physical transformation and therefore claims 1-8 and 13 are nonstatutory (See MPEP 2106).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,233,245 to Romano et al. (hereinafter Romano).

With regard to regulating the filtering bandwidth on the basis of a physical criterion inherent to the method in such a way that signal changes not caused by noise are recognized as early as possible, as shown in claim 1, Romano teaches controlling

the bandwidth of a filter to minimize the delay based on the noise and the rate of change in the signal (col. 2, line 25 - col. 3, line 59).

With regard to regulating the bandwidth in such a way that the variation of the signal does not substantially exceed a predefined multiple of the intrinsic noise of the measuring sensor, as shown in claim 2, Romano teaches defining the bounds of the input signal based on the noise of the input signal from a sensor (col. 3, lines 26-34).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Romano in view of US Patent Application Publication 2004/0138859 to Green (hereinafter Green).

Romano teaches all the limitations of claim 1 upon which claim 4 depends. Romano does not teach that a difference of the signal from a version of the signal whose bandwidth is delimited more strongly is observed as a variation of the signal, as shown in claim 4. Green teaches using two filters and determining whether there is a change in the signal from a sensor by comparing the difference in the output of two filters (pars. 43, 56-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the noise filter, as taught by Romano, to include comparing the output of two filters, as taught by Green, because then further

ability to adjust the filter such that time constants do not detrimentally effect the sensor output would have been available (Romano, col. 1, lines 15-22).

11. Claims 5, 6, 8, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romano in view of US Patent No. 6,594,613 to Ley et al. (hereinafter Ley).

Romano teaches all the limitations of claim 1 upon which claims 5, 6, 8, 12 and 13 depend. Romano does not teach a filter bank that may use two outputs instead of an individual filter, as shown in claims 5 and 6, a low pass filter, as shown in claim 8, or a filter bank that is a series of filters, as shown in claim 13. Ley teaches a filter bank that allows selecting of one or more low-pass stages that are in a series circuit (col. 4, lines 1-26; Fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the noise filter, as taught by Romano, to include a filter circuit, as taught by Ley, because then filter bandwidth would have been easily adjusted.

Romano does not teach receiving a signal from a thermocouple and displaying the measured variable, as shown in claim 12. Ley teaches outputting process variables such as temperature (col. 2, lines 10-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the noise filter, as taught by Romano, to include measuring temperature, as taught by Ley, because process variables would have been displayed and controlled more accurately.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Romano in view of Ley as applied to claim 5 above, and further in view of US Patent No. 5,465,410 to Hiben et al (hereinafter Hiben).

Romano and Ley teach all the limitations of claim 5 upon which claim 7 depends. Romano and Ley do not teach a filter bank with a parallel circuit, as shown in claim 7. Hiben teaches a filter bank that is a parallel circuit (Fig. 1; col. 2, lines 48-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the noise filter combination, as taught by Romano and Ley, to include parallel circuits, as taught by Hiben, because then filter bandwidth would have been easily adjusted.

Allowable Subject Matter

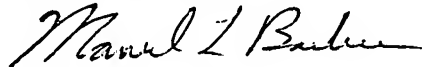
13. Claims 9-11 would be allowable if rewritten to overcome the objection and the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Manuel L. Barbee
Examiner
Art Unit 2857

mlb
June 20, 2006